

In the Claims:

1 1. (Currently amended) A method of fabricating a semiconductor
2 device by employing ion implantation to provide a
3 SiC semiconductor substrate at a surface thereof with a
4 region having dopant introduced therein, comprising the
5 steps of: providing said semiconductor substrate at least
6 at a first region of a surface thereof with a mask layer
7 including a polyimide resin film; and implanting dopant
8 ions.

Claims 2 to 5 (Canceled).

1 6. (Currently amended) The method of claim 1, wherein said
2 semiconductor substrate is heated to at least 300°C and
3 said dopant ions are implanted.

1 7. (Currently amended) The method of claim 1, wherein said
2 semiconductor substrate is heated to at least 500°C and
3 said dopant ions are implanted.

1 8. (Previously presented) The method of claim 1, wherein said
2 polyimide resin film is formed of photosensitive polyimide
3 resin.

1 9. (Currently amended) The method of claim 1, wherein said
2 polyimide resin film has a thickness of at least twice a
3 depth of implantation of said dopant introduced

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4 ions implanted into said semiconductor substrate at a
5 second region of said surface of said semiconductor
6 substrate free of said polyimide resin film.

1 10. (Currently amended) The method of claim 1, wherein a thin
2 metal film is posed further interposed between said
3 polyimide resin film and said semiconductor substrate.

1 11. (Currently amended) The method of claim 1, wherein a thin
2 film formed of SiO₂ is posed further interposed between said
3 polyimide resin film and said semiconductor substrate.

Claims 12 to 24 (Canceled).

1 25. (Currently amended) The method of claim 1, wherein said
2 mask layer is deposited on said semiconductor substrate at
3 [[a]] said first region to be undoped with said dopant
4 ions.

1 26. (Currently amended) The method of claim 1, wherein said
2 dopant ions are implanted into a second region unmasked by
3 said mask layer.

1 27. (New) A method of preparing a doped semiconductor
2 substrate, comprising the steps:
3 a) providing a semiconductor substrate comprising SiC;
4 b) providing a mask layer including a polyimide resin
5 film on a first region of a surface of said substrate;

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- 6 c) heating said substrate to at least 300°C; and
7 d) while said substrate is at least 300°C, implanting, by
8 ion implantation, dopant ions into said substrate
9 through a second region of said surface to form in
10 said substrate a doped region that is doped with said
11 dopant ions.

1 28. (New) The method according to claim 27,

2 wherein said polyimide resin film consists of a
3 photosensitive polyimide resin,

4 wherein said step b) comprises applying said polyimide
5 resin film on said first region and said second region of
6 said surface, then exposing said polyimide resin film to
7 light at said first region, and then removing said
8 polyimide resin film at said second region,

9 wherein said step b) does not involve photolithography
10 employing a photoresist, and

11 wherein said method does not involve chemical vapor
12 deposition and does not involve dry etching.

1 29. (New) The method according to claim 27, further comprising,
2 after said step d), a step of removing said polyimide resin
3 film by wet etching using hydrofluoric acid.

1 30. (New) The method according to claim 27, wherein said
2 polyimide resin film has a thickness of at least twice a
3 depth of said doped region.

1 31. (New) The method according to claim 27, wherein said
2 step b) further comprises forming said mask layer to
3 include a metal film interposed between said polyimide
4 resin film and said substrate.

1 32. (New) The method according to claim 27, wherein said
2 step b) further comprises forming said mask layer to
3 include a SiO₂ film interposed between said polyimide resin
4 film and said substrate.

[RESPONSE CONTINUES ON NEXT PAGE]

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